



FRC[®]

FIRST[®] Robotics Competition

How to Configure Your Radio 2011 FRC – *LogoMotion*

D-Link DAP-1522 Radio Configuration

Resetting a radio to default settings:

1. Plug in the power and Ethernet connections
2. Wait for the either the orange bridge light or blue access point light to begin flashing
3. Hold the reset button (on the back of the unit) for 10 seconds
4. Wait for the light to stop flashing (this signals the radio is starting to reset)
5. Wait for the light to resume flashing, your radio is now reset

NOTE: The screenshot examples in this document reflect an example radio configured for team 1995

Configuring a radio for Competition:

NOTE:

At official FRC events, you must use the FRC Radio Kiosk at the inspection table to configure your radio.

1. Set your **computer IP address** to 192.168.0.51
2. Switch your D-Link unit to **Bridge** mode using the switch on the back (the radio should always be in bridge mode at competition)
3. Reset your radio
4. Connect the radio to your computer using an **Ethernet** cable
5. Start Internet Explorer and type in an address of **192.168.0.50**
 - a. Username = **admin**
 - b. Password = blank
6. Click on the **Setup** tab on the top menu bar
7. Click on the **Wireless** tab on the left side of the page
8. Change the Wireless settings as follows:

WIRELESS NETWORK SETTINGS

Wireless Mode : Bridge Mode

Enable Wireless :

Wireless Network Name : 1995 (Also called the SSID)

802.11 Band : 2.4GHz 5GHz 2.4GHz/5GHz

802.11 Mode : Mixed 802.11 abgn

Enable Auto Channel Scan :

Wireless Channel : 6

Transmission Rate : Best(automatic) (Mbit/s)

Channel Width : 20 MHz

Visibility Status : Visible Invisible

WIRELESS SECURITY MODE

Security Mode : WPA-Personal

WPA

WPA Mode : WPA2 Only

Cipher Type : AES

Group Key Update Interval : (seconds)

PRE-SHARED KEY

Passphrase : 1995WPAKEY

WI-FI PROTECTED SETUP (ALSO CALLED WCN 2.0 IN WINDOWS VISTA)

Enable :

WIRELESS MAC CLONING

Enable :

MAC Source : Auto

Change the Wireless Network Name to your team number

Change the Security Mode to WPA-Personal

Change the WPA mode to WPA2 only

Change the Cipher Type to AES

Change the Passphrase to your WPA key*

Disable Wi-Fi Protected Setup

Disable Wireless MAC Cloning

9. Save your settings

10. Click on the **Network Settings** tab on the left side of the page

11. Change the Network Settings as follows:

The screenshot shows the 'LAN SETTINGS' configuration page. At the top, there is a header 'LAN SETTINGS' and a paragraph of instructions: 'Use this section to configure the internal network settings of your access point. The IP Address that is configured here is the IP Address that you use to access the Web-based management interface. If you change the IP Address here, you may need to adjust your PC 's network settings to access the network again.'

Below the instructions are four configuration fields:

- LAN Connection Type :** A dropdown menu set to 'Static IP'.
- Access Point IP Address :** A text input field containing '10.19.95.1'.
- Subnet Mask :** A text input field containing '255.0.0.0'.
- Default Gateway :** A text input field containing '10.19.95.4'.

Three callout boxes with arrows point to these fields:

- The first callout points to the IP Address field and says: 'Set the IP address to 10.XX.XX.1 where XXXX is your team number'.
- The second callout points to the Subnet Mask field and says: 'Set the Subnet Mask to 255.0.0.0'.
- The third callout points to the Default Gateway field and says: 'Set the Default Gateway to 10.XX.XX.4'.

12. Save your settings

Configuring a Radio for Access Point Use

For wireless connecting to the radio from a computer; it is best to do this after configuring bridge mode.

1. Switch your D-Link unit to AP mode using the switch on the back
2. Ensure your laptop is set to the proper IP address (192.168.0.51 if you have not changed your radio network settings or 10.XX.XX.51 if you have previously configured your radio)
3. Connect the radio to your computer using an **Ethernet** cable
4. Start Internet Explorer and type in your radio IP address (192.168.0.50 or 10.XX.XX.1)
 - a. Username = **admin**
 - b. Password = blank

5. Click on **Manual Wireless Network Setup**

The screenshot shows the DAP-1522 web interface with the following structure:

- Top navigation: DAP-1522, SETUP, ADVANCED, MAINTENANCE, STATUS
- Left sidebar: WIRELESS SETTINGS, NETWORK SETTINGS
- Main content area:
 - WIRELESS SETTINGS** (orange header):
 - Text: "The following Web-based wizards are designed to assist you in your wireless network setup and wireless device connection."
 - Text: "Before launching these wizards, please make sure you have followed all steps outlined in the Quick Installation Guide included in the package."
 - WIRELESS CONNECTION SETUP WIZARD** (black header):
 - Text: "If you would like to utilize easy to use web-based wizard to assist you in connecting your DAP-1522 to the wireless network, click on the button below."
 - Button: "Launch Wireless Setup Wizard"
 - Note: "Note: Some changes made using this Setup Wizard may require you to change some settings on your wireless client adapters so they can still connect to the D-Link Access Point."
 - MANUAL WIRELESS NETWORK SETUP** (black header):
 - Text: "If your wireless network is already set up with Wi-Fi Protected Setup, manual configuration of the wireless network will destroy the existing wireless network. If you would like to configure the wireless settings of your new access point manually, then click on the Manual Wireless Network Setup button below."
 - Button: "Manual Wireless Network Setup" (highlighted with an orange arrow)

6. Change the **802.11 Band** to **2.4Ghz**

The screenshot shows the "WIRELESS NETWORK SETTINGS" page with the following configuration:

- Wireless Mode : Access Point
- Enable Wireless :
- Wireless Network Name : 1995 (Also called the SSID)
- 802.11 Band : 2.4GHz 5GHz (An orange arrow points from a callout box to this radio button)
- 802.11 Mode : Mixed 802.11n, 802.11g and 802.11b
- Enable Auto Channel Scan :
- Wireless Channel : 1
- Transmission Rate : Best(automatic) (Mbit/s)
- Channel Width : 20 MHz
- Visibility Status : Visible Invisible

A callout box on the right contains the text: "Change the band to 2.4 GHz".

7. Save your settings